Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

1.9
E4892Esc
Cop. 2

BUDGETING
FARM AND RANCH RECREATION ENTERPRISES

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
DEC 21 1964
CURRENT SERIAL RECORDS

ESC...559 Federal Extension Service

United States Department of Agriculture

CONTENTS

INFORMATION NEEDED.................. 5

Planning Horizon................ 5
Fixed and Variable Costs........ 6
Consider Changes Only........... 7

A USEFUL FORM..................... 8

USING AND INTERPRETING THE BUDGET.. 10

BREAKEVEN ESTIMATES................ 14

Prepared by Glen J. Vollmar, Extension Economist -- Farm Management, Agricultural Science, Technology and Management Division; Federal Extension Service, USDA, Washington, D. C., assisted by staff members of FES and other USDA agencies.

BUDGETING FARM AND RANCH RECREATION ENTERPRISES

Budgeting is a working management tool. It is a way to seek, order, and weigh the best information available. It can be helpful in making difficult decisions needed in farm and ranch recreation enterprises. [1]

Research indicates that profitable recreation enterprises demand a high level of management. Using budgeting to pre-plan can be important in guiding managers toward profitable recreation enterprises and away from unprofitable ventures.

Although profit is usually the main goal, other considerations are given due weight since they influence final decisions. Farmers, ranchers, and others considering recreation enterprises will find budgeting useful:

- In deciding whether to undertake a recreation enterprise.
- In deciding on the kind and size of recreation enterprise.
- In developing and operating a profitable recreation enterprise.

Effective use of budgeting leads to a better decision because it:

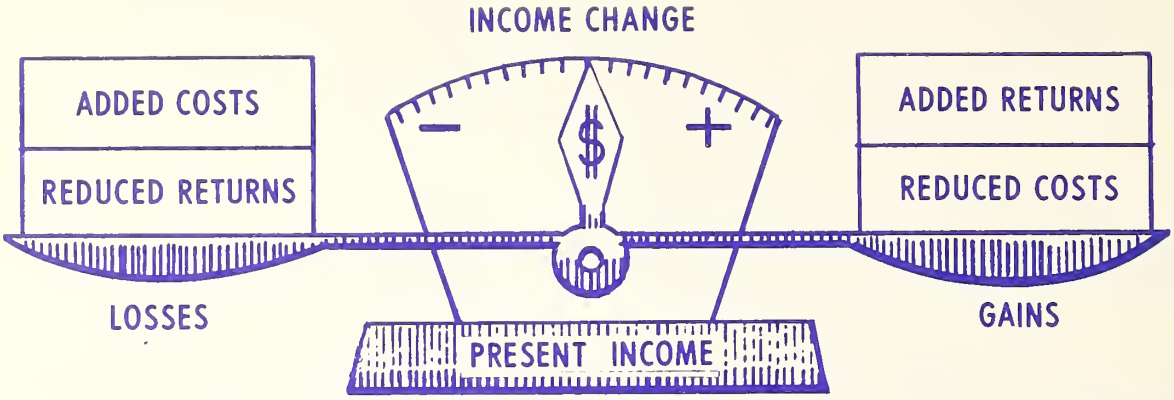
- Indicates the kinds of information the manager needs.
- Focuses the information and indicates the kinds of judgments needed.
- Gets the main facts and judgments down on paper.

Once the procedure is familiar, more detail can be incorporated if needed. However, simple budgets using only important key information are often the most useful. How does this management tool work? Let's look at some basic points:

- First of all, it is a simple step-by-step procedure.
- It is an analysis of DIFFERENCES. It can help answer questions such as -- what will the probable difference be between dollar GAINS and dollar LOSSES if a fishing enterprise is added to a farm business and crop and pasture acreage is reduced?

---

[1] The budgeting method discussed in this publication is called "partial budgeting" by economists.



- A simple balance illustrated above shows the process of weighing LOSSES in income against expected GAINS in income. If, for example, a fish pond enterprise adds more to present farm income (GAINS) than income is reduced by the changes made (LOSSES), the pointer on the balance will move to the plus side. If expected LOSSES outweigh the best information available on probable GAINS, the pointer will move to the minus side.

- This method does not give the exact income[2] produced by the recreation enterprise. It gives an indication of the probable change in total income for the farm or ranch business.

- The gains or losses from several alternatives can be calculated and compared.

A manager is concerned with what is anticipated and probable. He can make careful estimates based on the performance of other enterprises, personal experience and applicable research. But, the future is uncertain. Research concerning farm and ranch recreation enterprises is relatively new. Tested research data that applies to all localities and circumstances is limited.[3]

---

[2] There are several definitions of income. Throughout this paper income is defined as the labor and management return to the operator and unpaid family or other unpaid sources above a 5 percent interest return on average investment capital and average operating capital assumed used in the business for an average of six months out of the year.

[3] The Federal Extension Service, USDA, has published a useful bibliography of current selected publications on Rural Recreation as a Business. Several publications listed in this bibliography contain planning information. Six State-USDA (Economic Research Service) recreation enterprise studies completed or in process in Missouri, Arkansas, Ohio, New England, South Carolina, and Oregon are highly recommended. USDA-A.I. B. No. 277, Rural Recreation Enterprises for Profit, October 1963, is also a helpful source of information. Adjust published data to fit individual situations.

Such items as the number of people who can be expected to patronize fee fish ponds and the expected length of time that equipment can be used before it must be replaced can only be estimated. Therefore, don't expect budgets to be precise, but remember that the budgeted result can be only as accurate as the estimates used. Estimates are useful in decision making but judgment is vital to management in any business.

The decision maker should budget separate alternatives using different key estimates where the information at hand is extremely uncertain. One example is the approximate number of patrons or sales that are expected. Again using a fish pond example, a manager who anticipates an estimated 1500 customers a year may also want to try out budgets for 1000, 1250, 1750 and 2000 expected customers. This way he can estimate how many customers would be necessary to make the enterprise profitable.

INFORMATION NEEDED

Planning Horizon

The "planning horizon" is the time period in which dollars invested are to be recovered. During this time the manager can see into the future with reasonable accuracy to project present trends such as the demand for a recreation enterprise or the possible obsolescence of equipment. With today's rapidly changing conditions, the planning horizon for most livestock and crop enterprises is relatively short — generally 5 to 15 years. Individual cases vary widely. The same, no doubt, prevails for most recreation enterprises.

To put probable costs and returns on a common base so various alternatives can be compared, prorate all costs and returns on an annual basis for the duration of the planning horizon. This means breaking down into one year increments the fixed cost charges (depreciation, insurance, taxes, and interest) on added investments that will be used in the business for more than one year.

Determine the length of time that investments such as rowboats will probably be used in the business. Stress that budgeting is for the farm manager's use in making decisions. Therefore, for planning purposes, the length of time he expects to use boats in the business may not exactly agree with the depreciation period used for income tax reporting or the length of time a creditor might extend a loan to purchase boats.

Fixed and Variable Costs

In budgeting, always distinguish between fixed and variable costs. [4]

Fixed costs are the same regardless of how many customers patronize the recreation enterprise. Examples are depreciation, insurance, retailer's licenses, fees required to do business, taxes, and interest on the investment. Some costs may be already fixed, such as the taxes on presently-owned real estate. Other costs will become fixed if certain actions are taken, such as constructing a pond and purchasing boats.

Hired labor may be either a fixed or a variable cost. If labor must be hired for the recreation season and if there is nothing productive for labor to do when there are no customers, it becomes a fixed cost.

Fixed costs are difficult to prorate on an annual basis, but this is necessary. Figure 1 shows how to calculate annual fixed costs on buildings, equipment, and other investments. Use cost rates that fit local conditions.

FIGURE 1

Depreciation (cost minus salvage or resale value) ÷ (estimated years to be used in the business).......... $__________

Interest[†] (5% of the mid-value or 2.5% of new cost)* .... __________

Taxes (Assessed value x rate)** .... __________

Insurance (About $3.50 to $4.00 per $1000 insured value) (Fire, lightning, hail and wind) .... __________

TOTAL ANNUAL FIXED COSTS $__________

[†] The average annual investment can be used to estimate average interest, taxes and insurance costs. The average annual investment equals new cost plus salvage value divided by 2.

* This assumes an "opportunity cost" of 5 percent on the average investment.

** Taxes: Real estate taxes include buildings, land, etc. Personal property includes tractors and equipment. Rates will vary by location.

---

[4] For a more detailed discussion on cost classification see A Primer on Costs by Fred E. Justus and Charles L. Beer, C-788, University of Missouri Extension Division, Columbia, Missouri, August 1963.

For budgeting purposes, interest on the investment is called the "opportunity cost" of the dollars invested. This is the probable return on the invested dollars that was foregone in order to invest in the recreation enterprise. On some farms and ranches where dollars for crop and livestock production are limited, the "opportunity cost" interest rate may be 10 to 20 percent or more. Where dollars are readily available, commonly used "opportunity cost" interest rates on farm and ranch capital at the present time range from 4 to 6 percent.

A rowboat investment is used in Figure 2 to illustrate the procedure for calculating annual fixed costs. It is assumed that a new boat costs $200 and that it will be used in the business for 5 years. At the end of 5 years it is anticipated that its "salvage value" will be $50. Note that the price paid for the new boat was $200 -- however, the fixed costs prorated on an annual basis are estimated at $40.50 a year.

FIGURE 2 -- Annual fixed costs estimated for a rowboat investment

Depreciation....	$\$200$ minus $\$50$ (salvage value) = $\frac{\$150}{5\text{ years}}$ =	$\$30.00$
Interest....	$\frac{\$200\text{ plus }\$50}{2}$ x 5%	6.25
Taxes....	$\frac{\$200\text{ plus }\$50}{2}$ @ ($\$30$ per $\$1000$)	3.75
Insurance....	$\frac{\$200\text{ plus }\$50}{2}$ @ ($\$4$ per $\$1000$)	.50
	Total annual fixed costs	$\$40.50$

Variable costs are associated with the volume of business (the customer sales) of the recreation enterprise. These costs are usually easily changed since in most cases they are expenditures for current production items. Examples of variable cost items are gasoline, repairs, bait, advertising, fertilizer, feed, food stand items, and game birds.

Consider Changes Only

The budget weighs GAINS against LOSSES as changes are made. It is used to indicate whether or not a recreation enterprise will or will not add to present farm or ranch income. Therefore, it considers only the business costs and returns that change as the enterprise changes. A complete listing of all costs and returns for the farm or ranch is not needed.

Fixed costs on investments such as existing buildings and equipment that will not be disposed of will not change whether recreation enterprise changes are made or not. However, any added fixed costs as well as added variable costs such as repairs, gasoline, and oil used by the tractor for work with the recreation enterprise should be included in the budget.

A USEFUL FORM

The budgeting concept can be put down on paper in a form that is useful in counseling and will help the manager weigh key information. Many factors affect costs and returns. Use the simplified partial budget form shown in Figure 3 to summarize them for easy reference, review, and comparison.

If several alternative changes such as sizes or kinds of recreation enterprises are to be considered, use a separate form for each. Follow the framework step by step for each alternative budgeted so that no important information is left unconsidered. Using a budget should become almost automatic to both the counselor and the manager. A budgeting form such as this should be reproduced and used as liberally as scratch paper.

It is often necessary and wise to budget several possible changes or the same basic change using different assumptions on separate forms. The forms showing the alternatives can then be placed side by side and the results easily compared.

After you develop one or several budgets you may need to refine them. DANGER -- if budgets are to provide the basis for sound decisions, personal bias should not be allowed to refine or change the figures so final results agree with predetermined opinions.

The considerations listed at the bottom of the form (in part E) are important. These things are difficult or impossible to assign a dollar value. List questions and comments about other possible resource uses, risk, liability, demand outlook, labor requirements, attitudes toward working with people, working on weekends, differences in managerial requirements, the availability of credit and technical assistance, and anything else that has a bearing on the manager's decision.

Since changes can be expected year after year, especially if there is growth in the business, the manager must develop and study new budgets whenever he is faced with important decisions. Management is a dynamic process.

FIGURE 3 -- Farm and Ranch Recreation Budget

A) The Change: ____
____

B) Key Information and Assumptions:
1) ____
2) ____
3) ____
4) ____

C) Income Changes:

Added Costs ______________________________ $________
______________________________ ________
______________________________ ________
______________________________ ________
TOTAL $________

Reduced Returns ______________________________ $________
______________________________ ________
______________________________ ________
TOTAL $________
(LOSSES) $________

Added Returns ______________________________ $________
______________________________ ________
______________________________ ________
TOTAL $________

Reduced Costs ______________________________ $________
______________________________ ________
______________________________ ________
TOTAL $________
(GAINS) $________

GAINS $________ minus LOSSES $________ = INCOME CHANGE (+ OR -) $________

D) Added Capital Required:
1) Land ________
2) Buildings ________
3) Equipment ________
4) Annual Variable Inputs $________
5) ____________________ ________
6) ____________________ ________
TOTAL ADDED CAPITAL $________

E) Also Consider:
1) ____
2) ____
3) ____

USING AND INTERPRETING THE BUDGET

Consider also the difference in the amount and the kind of management and labor required by various enterprises. Labor peaks may conflict with the farm workload. Week end work may be required. Recreation enterprises also involve working with people. Managing a recreation enterprise is different from crop, livestock, poultry, or forestry production.

A further point -- it usually takes time to develop a recreation enterprise. There may be no or few customer sales for the first year or two. The "added returns" from the enterprise may be much lower during the development period than the average for the entire planning horizon. Cash fixed costs and the actual interest paid must be met anyway. A separate trial budget for the first year, another for the second year, etc. would help the manager judge whether or not he would be able and willing to survive the early lean years.

To illustrate the use of budgeting as a tool the following three sample budgets show different proposed recreation changes. 5/

Example 1 shown in Figure 4. A recreation enterprise consisting of a 6-acre pond and fee fishing was considered. This change was assumed to take 10 acres of pasture land and 5 acres of cropland out of forage and grain production. The probable labor and management income change for this example was determined to be an increase of $795. The farm or ranch business would be ahead an average of $795 a year over the present, with a 5 percent return on capital and pond costs prorated over a period of 10 years. It is important to remember that this result is only as accurate as the information used in the budget.

Example 2 shown in Figure 5. This example substitutes a farm vacation enterprise for a poultry flock of 2,000 laying hens. It was assumed that the family has limited resources and must make a choice between these enterprises. The budgeted income change for this example shows a loss of $160. The family would probably decide to keep the poultry if they prefer maximum income. If they are willing to take $160 less income and would prefer to work with the farm vacation enterprise, they might give this change further consideration.

Example 3 shown in Figure 6. In this example a rancher plans to double the hunter capacity of a game bird shooting preserve now in operation on the ranch, sell deer hunting permits on 1200 acres of land, and convert 200 acres of marginal cropland into intensive game feeding and cover area. These changes would convert all of the rancher's land and other resources into a recreation business. This example shows that budgets are useful in evaluating changes in size as well as in equipment, facilities, and procedures used with existing recreation enterprises. Only the added costs and returns were considered. The budget indicates that the rancher's labor and management income would be about $3000 more if he made the changes shown. To implement these changes, approximately $2000 capital would be required in addition to the $8000 estimated available after the sale of farm equipment previously used for crops.

5/ Caution -- the sample budgets are hypothetical cases and are used only for purposes of illustration. Recreation enterprise data are based on those given in USDA-A.I.B.-277.

FIGURE 4 -- Farm and Ranch Recreation Budget

A) The Change: Build 6 acre pond, stock it and permit fee fishing, take 10 acres of pasture and 5 acres of cropland out of forage and grain production.

B) Key Information and Assumptions:

1) Pond cost $4,000, prorate over a 10 year period.
2) Fee fishing on average of 1500 pole days @$1.50 annually.
3) Buy 10 boats @$200. each, keep 5 years. Salvage value $50.00
4) Returns from bait, boats and tackle - $1100.00 a year.

C) Income Changes:

Added Costs	Pond (depreciation $400.00, Interest $100.00)	$ 500	
	Boats ($40.50 x 10, From figure 2).	405	
	Fish, bait, tackle, repairs, fertilizer, weed control	1,000	
	Insurance, advertising, interest on variable inputs.	300	
		TOTAL	$ 2205.
Reduced Returns	Pasture ($15.00 per acre x 10 acres).	$ 150.	
	Rotated crops ($70 per acre x 5 acres)	350.	
		TOTAL	$ 500
		(LOSSES)	$ 2705
Added Returns	Fishing fees (1500 x $1.50).	$ 2,250	
	Boat rental.	600	
	Bait and tackle sales	500	
		TOTAL	$ 3350
Reduced Costs	Pasture maintenance ($5/acre x 10 acres).	$ 50	
	Crop costs, seed, fertilizer, fuel ($20 per acre x 5 acres)	100	
		TOTAL	$ 150
		(GAINS)	$ 3,500

GAINS $ 3,500 minus LOSSES $ 2,705 = INCOME CHANGE (+ OR -) $ + 795

D) Added Capital Required:

1) Land	—	4) Annual Variable Inputs	$ 1,300
2) Buildings	—	5) Pond.	4,000
3) Equipment	2,500	6)	
		TOTAL ADDED CAPITAL	$ 7,800

E) Also Consider:

1) Other possible returns from $7,800 added capital required
2) Possible future competition in the locality
3) Requires family labor on weekends. New management requirements.

FIGURE 5 -- Farm and Ranch Recreation Budget

A) The Change: Add a farm vacation enterprise. Drop a poultry enterprise of 2,000 laying hens.

B) Key Information and Assumptions:

1) Add bathroom, house remodeling $4000, prorate over 15 year period.
2) Purchase equipment $1000., prorate over 5 year period.
3) 30 family-weeks business a year @ $150. (average family charge
4) Poultry cost $8000 a year and return $9800.00

C) Income Changes:

Added Costs	Fixed costs on $4,000 house changes (15 yr period).	$ 410	
	Equipment (fixed costs) boats, ponies, etc	300	
	Food, laundry, utilities ($55.00 per family week).	1,650	
	Insurance, advertising, Interest	500	
		TOTAL	$ 2,860
Reduced Returns	Poultry (eggs and cull bird sales).	$ 9,800	
		TOTAL	$ 9,800
		(LOSSES)	$ 12,660
Added Returns	30 family weeks @ $150.00	$ 4,500	
		TOTAL	$ 4,500
Reduced Costs	Poultry (replacements, feed, other).	$ 8,000	
		TOTAL	$ 8,000
		(GAINS)	$ 12,500

(GAINS) $ 12,500 - (LOSSES) $ 12,660 = INCOME CHANGE (+ OR -) $ -160

D) Added Capital Required:

1) Land	—	4) Annual Variable Inputs	$ 3,000
2) Buildings	4,000	5)	
3) Equipment	1,000	6)	
		TOTAL ADDED CAPITAL	$ 8,000

E) Also Consider:

1) Poultry too much work --- dont like dust.
2) Can't take less income than present---2 girls in college.
3) 30 family weeks of business may be optimistic.

FIGURE 6 -- Farm and Ranch Recreation Budget

A) The Change: Double the hunter capacity bird shooting preserve, sell deer hunting permits on 1200 acres, convert 200 acres of cropland into game feeding area.

B) Key Information and Assumptions:
1) Sell 20 deer hunting permits a year @ $50.00 each.
2) Develop 200 acres wild life feed and cover @ $10.00 per acre per yr.
3) Anticipate 500 new bird shooting sales @ $30.00 each.
4) Sell some farm equipment at a net of $8000.00.

C) Income Changes:

Added Costs	200 acres game area, seeding & maintenance	$ 2,000	
	Game bird purchases, feed.	4,000	
	Dog expenses	1,000	
	Insurance, hired labor, advertising, interest	3,000	
		TOTAL	$ 10,000
Reduced Returns	200 acres crops sold @ $40.00 per acre	$ 8,000	
		TOTAL	$ 8,000
		(LOSSES)	$ 18,000
Added Returns	20 deer hunting permits @ $50.00	$ 1,000	
	500 bird shooting sales @ $30.00	15,000	
		TOTAL	$ 16,000
Reduced Costs	200 acres crop costs---Seed, fert-	$	
	ilizer, fuel @ $25.00 per acre	5,000	
		TOTAL	$ 5,000.
		(GAINS)	$ 21,000.

(GAINS) $ 21,000 - (LOSSES) $ 18,000 = INCOME CHANGE (+ OR -) $ +3,000.

D) Added Capital Required:
1) Land –
2) Buildings –
3) Equipment –
4) Annual Variable Inputs $ 10,000.
5) (Minus farm equipment sold) -8,000.
6)
TOTAL ADDED CAPITAL $ 2,000.

E) Also Consider:
1) Bird shooting market demand -- can sales be doubled?
2) Possibility of improving present crop program.
3) Risk---all income from recreation enterprises.

BREAKEVEN ESTIMATES

Breakeven estimates can be made using the same information required in a budget. They are useful when dealing with the important uncertainty of consumer demand.

Breakeven estimates are estimates of the number of customer sales that are required to exactly "break even." At this point, the recreation enterprise would have no effect on farm or ranch net income. The budgeted GAINS would exactly equal the LOSSES.

A breakeven estimate can be computed directly from the information given on the budget form. For the sample budget shown in Figure 5, 32 family-weeks of farm vacation business would be necessary to "break even" with the family's present net income.

This can be computed as follows:

A) Total LOSSES ("Added Costs" + "Reduced Returns").	$12,660
B) Subtract any variable "added costs" -- costs that vary directly with the number of customer sales. (For Figure 5 this would be $1,650 for food, laundry, utilities.)	$ 1,650
RESULT:	$11,010
C) Subtract "reduced costs."	$ 8,000
RESULT:	$ 3,010

This is the amount over the variable costs of the recreation enterprise that must be met to "break even."

D) Subtract the average cost ($55) for the variable costs of food, laundry and facilities per family-week from the average family-week charge ($150). RESULT:	$ 95
E) Divide the result of Step C by the result of Step D, $3,010 divided by $95 = (approximately)	32

This is the number of customer sales @ $150 per family-week required to "break even."

With the breakeven estimate before him, the manager can consider an important question -- How likely is it that more than the breakeven number of customers will patronize the recreation enterprise?

Breakeven estimates can also assist the manager in weighing his pricing possibilities. The question of what to charge should consider factors such as competition in the area (the supply) and the number of probable customers and what they are willing to pay (the demand). A breakeven estimate can be computed for alternative charges per sale. Using the same procedure used to determine the breakeven number of customers required at a charge of $150 per family-week, breakeven estimates can also be determined for $100, $125, $175, and $200 charges per family-week. The results are shown in Figure 7.

FIGURE 7

Charge per Family-week	Number of Family-weeks Required to "Break even" (approximately)
$100	67
125	43
150	32
175	26
200	21

When the number of breakeven customers at a given charge exceeds the capacity of the planned facilities and requires additional investment to increase capacity, you must re-calculate the breakeven estimates. If in Figure 7, 50 family-weeks is the maximum capacity of the vacation farm's facilities, the $100 rate would have to be discarded. It would not be possible to break even at that rate because not enough families would be provided for.

If enlarged facilities are contemplated, make a new series of breakeven estimates. They should take into account the additional investment costs required to accommodate more family-weeks of business.

With the estimates given in Figure 7, the manager can ask himself, "Would the family-week sales per season more likely exceed 43 at the $125 rate or 32 at the $150 rate, etc.?" He can base his answer to this question on the supply and the demand for similar recreation enterprises, if any, in the area. Research results can give some insight. Discussion with the operators of recreation enterprises and with possible customers would help. The manager's decision will largely hinge on his judgment.

Cooperative Extension Work:
United States Department of Agriculture and
State Land-Grant Colleges and Universities
Cooperating

Issued November, 1964